

## **Extension for Private Forest Owners: Insights from a Representative Opinion Poll in Switzerland**

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This paper presents findings from a representative opinion poll among Swiss private forest owners regarding the actual and future role of outside professional advice, training and extension services. First, the Swiss private forest owners are a highly heterogeneous group insofar as they are difficult addressees for any form of public support and extension services. Second, the majority of Swiss private forest owners appreciate the presently offered training facilities as well as the advisory activities of the cantonal and communal public forest services. Third, Swiss private forest owners are open to new forms of extension provided that such services will be custom-tailored and initiated by the advisers. Custom-tailored in this context means that the individual demands of private forest owners need to be addressed in a differentiated manner and advice will not be limited to the economic aspects of timber production. Local advisers from cantonal and communal forest services are presently in a pole position for offering new forms of extension, however, there are also more opportunities for services offered by private firms and non-governmental organisations. The broader scope for advisory and supporting activities as well as an increasing variety of potential actors providing such services implies a change in formulating and implementing forest policy programs at federal and cantonal levels.

**Keywords:** small-scale forest owners, forest policy addressees, Swiss forest policy, advisory policy instruments, targeting of extension services

### **INTRODUCTION**

Extension and advisory services have a prominent place as policy instruments used by the state and non-governmental organizations in order to influence the conduct of forest owners. Extension is either used as an individual instrument or in support of other instruments, such as obligations, prohibitions or material incentives (Bliss and Martin 1990, Zimmermann 1994, Vedung 1998, Kaufmann-Hayoz *et al.* 2001). As a modern concept, extension in forestry is 'a process of integrating knowledge, attitudes and skills to determine what is needed, how it can be done, what local cooperation and resources can be mobilized, and what additional assistance is

available and may be necessary to overcome particular obstacles in achieving forestry objectives' (IUFRO 2002). It is a targeted educational process which involves forest owners together with public and private service providers as equal partners.

Extension and advisory services for forest owners are an established element of national and international forest policies and are often linked to a general information mandate. At an international level, extension was explicitly named in the forest-relevant documents of the Earth Summit in Rio de Janeiro in 1992 (UNCED 1992, Chapters 11.8 and 11.18), and in the follow-up processes (IFF 1995) as one of the many instruments used to promote sustainable forest management. Extension is an important part of bilateral and multilateral development co-operation and is increasingly used for capacity building and the strengthening of local structures and knowledge (OECD 1995, Rifkin 1999). Concurrently, and in a context of unbalanced power and knowledge structures, extension can be criticised as a 'disguised' top-down tool to impose non-transparent interests (Ewert *et al.* 2004).

Private forest owners are a specific, frequently non-organized group of protagonists within a structure composed of various elements, including society, politics, markets and the natural environment. As individual landowners they occupy the distinct position of relating to the forest as a natural resource for private commercial use and at the same time as a significant element of the landscape subject to numerous public interest, for example leisure, health and quality of life (Schmithüsen 2004). As owners they have an impact on the forest: they can form or change it and they can more or less take care that their forest fulfils individual and collective functions. They are among the main addressees of national and international public policy aimed at the protection and sustainable management of forests. The relation between owners and their forest is a key issue in forest policy research, especially in countries with a strong tradition of private forest ownership, for example in most Western European countries. This is, for instance, the case for the Nordic countries (Ingmarson 2004, Enggrob-Boon *et al.* 2004), Germany (Ziegenspeck *et al.* 2004) and Austria (Hogl *et al.* 2003).

The behaviour of forest owners is influenced by various outside factors, including legal and political regulations, mechanisms steering markets, and socio-cultural normative systems (customs and traditions) (Mayntz and Scharpf 1995, Knoepfel *et al.* 2003). As owners of forests they have not only a closer or looser relationship with their property, but also connections with social regulative systems (Ewert *et al.* 2004). Changes in the external regulative systems or in the quality of the natural resources affect the individual landowner directly or indirectly. Extension activities are among the means by which various policy actors attempt to steer the conduct of forest owners in a particular direction (Kurtz and Lewis 1981, Egan *et al.* 1997, Pregernig 2001). External factors mostly influence attitudes, perceptions, knowledge and motivation, and thereby the expectations and intentions, as inner regulative mechanisms determining behaviour (Fishbein and Ajzen 1975, Aizen and Madden 1986, Aizen 1988, Aizen *et al.* 1992, Wild-Eck 2002). Besides inner regulation systems there are individual and structural factors such as age, belonging to a given language group, personal dexterity, or the surface area and accessibility of the forest which influence these expectations and intentions (Raselli and Wild 1994).

## CONTEXT AND OBJECTIVES OF THE RESEARCH

It is estimated that there are approximately 250,000 private forest owners in Switzerland and that 30% of Swiss forests is privately owned (Bundesamt für Statistik and Eidgenössische Forstdirektion 2003). Annual timber felling in private forests (excluding salvage logging after extreme events) is about 1.4 M m<sup>3</sup>. No countrywide study on private forest ownership has been undertaken in Switzerland since the 1950s (Grünig and Sutter 2000). The strong orientation of policy research towards the public forest domain, which comprises two thirds of the country's forest area, is probably the main reason for this lack of interest in relevant research work.

A significant change occurred in 2000 after the devastating impacts of a storm with very high windthrow, which primarily affected private forests in western and central Switzerland. One consequence has been a more intensive co-operation between federal and cantonal forest services and private forest owners. The state intervened mainly by means of financial incentives and extension services in order to support private forest owners to recover timber from storm damage and to foster reforestation. As the emergency program had a highly political aspect and since the effectiveness and efficiency of both policy instruments depended largely on the attitudes, values, needs and knowledge of the addressees, a country-wide inquiry on private forest owners was launched in 2000 by the federal forest service.

Providing advisory services for forest owners is an obligation laid down explicitly in Article 30 of the *Swiss Forest Act 1991*. Most cantonal forest laws<sup>1</sup> contain equal or similar mandates. As a consequence, the state authorities expend considerable sums of money every year on this task. In spite of the importance given to extension, little is known about the objectives, mechanisms, extent, effects and success of public and private advisory services in the forest sector. Budgets and accounts provide some information on how much the state – and to some extent, private organizations – invest in forest extension activities. However, without detailed knowledge of the specific needs and demands of the forest owners it is impossible to evaluate and legitimize existing as well as future extension programs (De Bruijn and Hufen 1998, Karppinen 1998, Pregernig 2001).

Obtaining such information is particularly difficult when the number of forest owners is large, the ownership structure heterogeneous and the organization of owners not fully developed. This is the case with regard to private forest property in Switzerland. As of 2002 little or no information was available that provided answers to the following basic questions (Zimmermann *et al.* 2001):

- Who are the forest owners and what is the ownership structure?
- Do the forest owners have a need for extension?
- Are the existing extension services used, and if so, by whom?
- What effects do public and private extension services have on forest owners?
- On which topics do forest owners require advice, and to what extent do these topics correspond with the actual extension offers?
- By whom would forest owners like to be advised?

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<sup>1</sup> Switzerland has a federal structure with 26 cantons and approximately 2700 communes. The Swiss Constitution assures considerable autonomy to the cantons.

Because of the obvious information deficiencies and the growing political interest in private forest management, the Swiss Forest Agency asked the Chair in Forest Policy and Forest Economics of the Swiss Federal Institute of Technology in Zurich to carry out a representative opinion poll. Its objective was to obtain more consistent information on private forest owners as a particularly relevant group of actors in the forestry context. It was expected that the survey results would enable the federal as well as cantonal authorities to have a better targeted and more efficient approach towards policy measures addressing this group of forest owners. The opinion poll was a component of a larger project aimed at improving the effectiveness and efficiency of forest policy measures at program and implementation levels (Zingerli *et al.* 2004).

## RESEARCH METHOD

The project is based on a representative opinion poll for the whole of Switzerland. Data were collected through a survey in which questionnaires were posted to a sample of individual private forest owners. By limiting the study to individuals, a number of collective private forest owners, including stock companies, foundations and (public utility) organizations were excluded. This manner of proceeding can be justified because the number of collective private forest owners is small. However, it must be recognized that the few collective owners often own comparatively large areas of forest property (Urech 2003).

Due to the country's federal political system, every canton has its own system of landowner registrations. As there is no national register of private forest owners in Switzerland it was difficult to define the sampling frame. Similar problems in surveying forest owners have been described for Germany and Austria (Ruschko 2002, Bieling 2003). A two-stage sampling design was adopted, with first a stratified random sample of 599 representative communes (of the total 2700 communes in Switzerland) followed by a random sample of 2680 private forest owners (of total 250,000 forest owners) in the selected communes. By using unpublished statistical data from the Swiss Federal Statistical Office and with the help of cantonal forest services, revenue services and land registry offices it was possible to draw a representative sample of private forest owners for the whole of Switzerland (Wild-Eck 2003, Wild-Eck and Zimmermann 2005b).

The questionnaire contained a total of 80 questions, and typically required at least 40 minutes to complete. The following subjects were covered:

- structural characteristics linked to the forest property (surface area owned, ownership status);
- owners' relation to their forest;
- forest management;
- relations with the forest service;
- relation to other forest users;
- problems linked to ownership of forest;
- forest-related attitudes; and
- individual attributes of the person (age, gender, education).

A test of the questionnaire was conducted in October 2002. The main survey took place between November 2002 and January 2003 in the three Swiss national languages (French, German and Italian).

Of the initial list of 2680 apparent forest owners, 459 were regarded as ‘neutral sampling losses’ (including 55 with unknown addresses, 65 who had departed from their reported addresses, 73 who were deceased, and 266 who reported they did not own forestland). Of the net sample of 2161 forest owners, 1322 returned completed questionnaires, a response rate of 61.2%<sup>2</sup>. As the response rate of the sample is high it could probably be used as a comparative basis for future inquiries on Swiss private forest owners.

Due to the representative sample, high response rate and the wide-ranging questionnaire, the survey provided comprehensive information on the social structure of private forest owners in Switzerland. The Swiss Forest Agency, as the mandating office, received a descriptive report in spring 2004. The final report was published in 2005 (Wild-Eck and Zimmermann 2005a). Apart from the descriptive results, the report provides an interpretation of the policy content and recommendations for the client. Supplementary short reports in the three national languages and in English summarize the main findings of the opinion poll (Wild-Eck and Zimmermann 2005b).

## **ASPECTS OF THE QUESTIONNAIRE OF PARTICULAR RELEVANCE TO EXTENSION ACTIVITIES**

While the survey questions covered general structural and factual issues related to private forest tenure, the discussion here is confined to particular questions with forestry extension relevance.

### **Questions in Direct Relation to Extension**

Two of the nine response alternatives to the question ‘What factors do you consider in the utilisation of wood in your forest?’ are of immediate relevance to extension. These are ‘recommendations of the Swiss Forest Owners Association’ and ‘recommendations of the forest service’. Another connection to extension was implied by the question ‘Should measures be taken in order to make the cultivation of your forest financially more attractive?’ Two of the 15 response alternatives can be considered as related to the subject. The response alternatives ‘better training possibilities for private forest owners’ and ‘encouragement of regional timber sales and timber marketing centres’ make reference to extension services.

Responses to the question ‘How frequently are you in contact with the forest warden responsible for your forest?’ provide insights into the relationship between private forest owners and the nearest public forest policy actor. The frequency of such contacts demonstrates the necessity of advice as perceived by the public authorities.

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<sup>2</sup> A return rate of over 60% is high for a postal survey (Koch 1998, Klein and Porst 2000). High response rates are important for the quality of survey data, because the effect of systematic bias by non-respondents is reduced (Diekmann 2004).

The seven response alternatives to the question ‘What do you expect from the forest warden in relation to your forest/your wood?’ are all linked to extension. They refer to assistance in timber grading, concluding sales contracts, advice on timber markets, measures of silviculture to be taken, recommendations on the choice of a contractor, and expectations concerning timber marking. With the exception of timber marking, all items are of an advisory nature. This is because timber marking is at present a legal obligation of the forest service (Article 21 of the *Swiss Forest Act*). The forest service thereby fulfils its duty to give the forest owners the permission to fell timber whilst using the contact between forestry experts and forest owners to provide advice.

Forest owners were asked ‘Are there actually any particular problems with which you are confronted as private forest owner?’ This was followed by the question ‘What are these problems?’ The answers have a connection with extension, and can be regarded as an indication of the need for advice. If aspects of extension really appear problematic to private forest owners, they may allude to them at this point of the survey.

#### **Questions Allowing Indirect Conclusions on Extension**

Various questions sought indirect information on the topic of extension. These questions included ‘How often have you attended (advanced) training courses regarding forest management?’, ‘If training courses are offered to forest owners, who should offer these courses?’, and ‘On what topic would you like to have a training course?’ It was assumed that forest owners give preference to training course providers that they hold in high regard, and select course topics in which they consider they lack knowledge. This allowed the drawing of inferences concerning the acceptance of extension service providers and possible topics on which advice would be of interest.

The answers to ‘How often are you in contact with other private forest owners?’ and ‘How would you describe your willingness to manage your forest together with other forest allotments or to have your forest managed together with other allotments in the future?’ are of particular interest. Responses serve as an indicator of the extent to which forest owners would like to make use of synergies through exchange with other owners, and of the extent to which they are prepared to develop such synergies in the future. The answers provide information on whether private forest owners cover their needs for advice within their own group and whether extension activities are ensured by informal channels among private forest owners.

The questions ‘Are your interests represented by the Swiss Forest Owners Association?’ and ‘What should this association do in addition or differently?’ provide indications of whether this organization is considered credible and generally accepted as an extension service provider. Answers to questions such as ‘Do you feel restricted in your freedom of management by state regulations?’, ‘Do you feel too strongly restricted in your freedom of management?’, and ‘What do you feel restricted by?’ give indications of whether advisory services linked to public obligations such as timber marking are felt as a limitation. Finally, the answer to the question ‘Are your activities in your forest influenced by subsidies?’ may indicate the degree to which forest owners are guided by external (state) activities, i.e. by public financial incentives.

## **SURVEY FINDINGS WITH RESPECT TO FORESTRY EXTENSION**

The survey findings relate to information about the social situation of forest owners, the degree of cooperation among them, the variety of motives for managing their property, their interest in the facilities currently available for training and technical advice, their judgement of the role of governmental support and the degree of satisfaction with the present forest service activities.

### **Typical Features of Private Forest Owners**

The typical Swiss forest owner is male, elderly (Table 1), has some kind of relation (unclear) to agriculture (actively farming, retired farmer, or (co)proprietor of agricultural land), attaches little or no economic relevance to his forest (Table 2), owns a property of less than 1 ha, lives near his forest (only 10% of owners live more than 20 km away from their forests), uses his timber for home purposes, and manages the forest himself (Table 3). Furthermore, the average forest owner tends to have conservative political views, agrees with public intervention in favour of the forest, and takes a sceptical view to additional nature conservation efforts.

### **Low Immediate Interest in Networking among Forest Owners**

The respondents generally had only rare or no contact among themselves (Table 4). Less than 10% were willing to cooperate more closely in future. This raises the question of whether Swiss private forest owners are not sufficiently informed about the advantages and possible improvements to be gained from cooperation, or whether they do not wish further external interference in managing their forests.

### **Driving Forces for Timber Use**

Private forest owners produce timber mainly for their own consumption. Storms and natural calamities are often driving factors in speeding up utilisation. Silvicultural recommendations by the forest service and the available time to work in the forest were mentioned less frequently. Market trends appear to play only a small role in the individual motivation. Public financial incentives and recommendations of the Forest Owners Association are rated low by the respondents in judging the driving factors for their forestry operations. However, only a few owners actually receive public funding. Of those receiving public funding, almost half believe that their activities are being influenced. Influence in this context often means motivating forest maintenance or even rendering forest maintenance possible.

### **High Priority of Financial Incentives**

Almost half of the private forest owners feel that public authorities do not need to undertake further steps in order to make forest management on their holdings more attractive. The remaining half frequently suggests financial encouragement promoting more effective wood heating systems. On the whole, it appears that any public action offering assistance is generally approved, but more in terms of providing financial incentives and appropriate working conditions than by offering new extension activities and focused training and technical assistance.

**Table 1.** Age structure of private forest owners in Switzerland (n = 1322)

Age class	Relative frequency (%)
Up to 30 years	1
31 to 40 years	9
41 to 50 years	18
51 to 60 years	26
61 to 70 years	20
Over 70 years	21
No indication	4

**Table 2.** Economic importance of forest property to private forest owners in Switzerland

Economic importance rating	Relative frequency (%)
Main source of income	1
Important source of income	1
Modest source of income	16
No source of income	55
Losing bargain (deficits)	24
No indication	2

**Table 3.** Classification of management of private forest in Switzerland (n = 1322)

Category of forest management	Relative frequency (%)
Owner alone without third party assistance	53
Not managed at all	17
Managed by third parties	13
Owner alone and with outside help (mixed)	15
No indication	2

**Table 4.** Contacts with other private forest owners (n = 1322)

Frequency of contact with other private forest owners	Relative frequency (%)
Several times a month	3
Monthly to quarterly	7
Only once or twice a year	24
Less than once a year	21
No contact	40
No indication	5



**Low Articulated Interest in Training Facilities and Technical Advice**

There was little articulated demand amongst survey respondents for technical advice and training to improve their forestry activities. Most of the forest owners reported only a limited interest in forest management courses. Most had never completed such a course, and for those who had, the last course attended was several years ago. There were almost no suggestions from the respondents referring specifically to extension and information services in the modern sense. Concerning the role of the actual course providers, two kinds of answers dominated: 'the local forest service is competent', or 'it does not matter to me'. Few identified the Forest Owners Association – the national institutionalised representation of forest owners – as a course provider, in spite of the fact that this agency has been offering a diversified program of training courses for many years. Regarding the content of training courses, the respondents emphasized 'concrete' topics such as general forest maintenance and tending, reforestation and regeneration techniques

**The Local Forest Service as the Main Adviser**

The Swiss constitution provides for the joint responsibilities of the federal and the cantonal governments in forestry matters. The cantonal forest service is largely in charge of implementing both national and cantonal forest policy measures. Although many forest owners have little direct contact with their local forest service they generally appreciate its role and activities. Official tree marking prior to felling is the most important demand for intervention, followed by requests for silvicultural advice. The legal obligation to mark trees for felling by a forest official is usually not perceived as a constraint, but rather as an occasion to consult on forest management issues. On the whole, the respondents confirmed that the local forest service is perceived as trustworthy and appreciated as a source of information and professional support.

**DISCUSSION**

The survey of private forest owners in Switzerland reveals great heterogeneity with regard to structural aspects of forest holdings, social structure of owners and individual forest management objectives. No substantive statements indicating an unsatisfied need for technical assistance and advisory services on the part of private forest owners were received. In fact, the majority of the owners felt that their specific demands are at present largely covered. The opportunity to consult with the local forester during official tree marking prior to felling was usually mentioned with a positive connotation. Only a minority of the owners regularly make use of practical training courses, and information exchange with other private forest owners is rarely resorted to. Some respondents have mentioned the need for advice directly related to their personal work such as felling, skidding, and 'tidying up' in the forest. Little demand for advice on ecological or economic matters was expressed by respondents. It can be concluded from the strongly expressed preferences for local advisors that the owners are more likely to accept assistance in connection with specific aspects in the management of their properties. The main factors directing their actions are personal resources, personal needs and prevailing traditions. On the whole, the findings confirm that a generic forest owner does not exist and that

whoever wishes to influence forest management practices needs a thorough understanding of a complex and diversified clientele.

From the survey findings it can be concluded that Swiss private forest owners as extension addressees can be divided into three groups that differ in demands and needs concerning their forest property. Of course, in reality the three groups that may be distinguished from a typological point of view overlap and are intergradient. The first group consists of owners that manage their holdings mainly for personal use for firewood and timber. They usually have a strong functional attachment to their forests and are open to specific advice on maintaining the timber supply role of their forest. The second group is formed by owners that manage their holdings in order to generate income from timber sales. This group has been, and still is, responsive to the prevailing system of professional training and support as made available by the forest service and the forest owner association. However, in view of the unfavourable economic conditions at present they appear to be uncertain on how to continue forest operations and are starting to articulate new needs in managing their forests. As for the third group, there are a considerable number of owners who perceive their forest primarily as having personal or family value. The possible meaning of extension for this group is likely to be the maintaining and conserving of their forest in its present state. The respondents from this group clearly indicate that wood production is not an important objective for them anymore.

A new and comprehensive approach in extension has to deal with the peculiarities and intergradations of the full range of owners. This means initiating meetings between extension specialists and forest owners in order to identify individual demands, and introducing other topics later. In this way, extension program design can develop more broadly in order to correspond with the real needs of the clients. In spite of the obviously low interest in modern forms of forest extension, it would be ill-advised to consider Swiss forest owners as indifferent to the future development of their forests. There is still a strong individual relationship to the forest property, even if its use is no longer primarily linked to the economic aspects of timber production. Current socio-demographic developments indicate that the number of owners with a partly or entirely emotional and functional attachment to their forest is increasing. This group is almost certainly the most difficult group to reach with the system of technical assistance practiced at present as well as the traditional extension contents and efforts. However, if they are appropriately approached in terms of their particular interests and forest management objectives they are likely to be open to new forms of extension. Similar developments have been reported, for instance, in Austria and Germany (Kvarda 2004, Ziegenspeck *et al.* 2004).

## CONCLUSIONS

The results of the opinion poll show that Swiss private forest owners are a highly heterogeneous group. There are major contrasts in regard to property size, ownership situation, and individual relationships to the forest. There are, for instance, individual owners with properties larger than 100 ha and communities of heirs with only a few hundred square metres of forest. Some have inherited a forest and see it as a part of their family history, whereas others have purchased their forest and see it

as a hobby or as a source of raw material. Others have no particular attachment to their forest.

The answers of the respondents lead to the conclusion that public policy measures aiming at influencing the behaviour of forest owners cannot rely more or less exclusively on providing established technical assistance in wood production and marketing. The prevailing, almost one-sided, orientation of forest policy focusing on productivity and efficiency in forest management and timber selling increasingly fails to satisfy the demands of a substantial proportion of private forest owners. A shift to an integrated and at the same time group-specific approach in extension is inevitable. This requires a considerable openness and flexibility on the part of the actual or potential extension providers. The same is true for research which so far has primarily focused on economic variables as driving forces of private forest owners' behaviour. New research needs to relate to a process-orientated understanding of extension as an important element in decision-making, to the development of multiple partner involvement, and to the ways and means for capacity building through collaboration of public and private extension providers (IUFRO 2001, 2003, 2004).

The congruency of extension activities with the requirements and motives of the target group is of considerable importance to the elaboration and implementation of a modern Swiss forest policy. It raises the question of which responsibilities the state should assume concerning the future conservation and utilisation of forests, and relates to such issues as deregulation, privatisation, and procurement of public goods. More specific to extension, the question is whether, and if so in what way and to what extent, the state should continue fulfilling advisory tasks in the forest sector. This is of particular relevance if the addressees display limited interest and do not come forward with an active demand for advisory and supporting services.

Political issues that concern the role of public responsibilities and state measures are, for instance:

- At which level should tasks that are assigned to the state be performed (centralization versus decentralization)?
- Which strategic objectives of public forest policies are to be chosen (in particular, whether or not multi-functional or mono-functional forest management should be enhanced)?
- Which instruments would be effective in reaching the chosen strategic objectives (in particular, whether to use economic, regulative or persuasive instruments, or a combination of them all)?
- How can a framework of public policies be designed in an effective manner (in particular, how can coordination between various policies and networking between state and private actors best be achieved)?

Initial experiences with the new Swiss Forest Program indicate that there is a need for maintaining a national policy framework and for using the forest-related knowledge that has been accumulated over many years. However, there is also a need for developing more effective stakeholder group-based strategies and for assigning specific extension and educational tasks to public agencies and private organizations. This implies a move away from policies largely focused on wood production forestry alone to the enhancement of a broader perspective addressing, for instance, environmental protection, nature and landscape conservation, and water

resources management. It also implies the use of more flexible policy instruments such as financial compensation for clearly determined public benefits provided by various groups of forest owners, ecological and environmental information support, process- and actor-oriented extension services, and well-targeted training and educational programs.

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